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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,606	02/06/2002	Ernest Rogers		6819

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Ernest Rogers
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EXAMINER

GREEN, CHRISTY MARIE

ART UNIT	PAPER NUMBER
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3635

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,606

Applicant(s)

ROGERS, ERNEST

Examiner

Christy M Green

Art Unit

3635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a second office action for serial number 10/068606, entitled Spherical and polyhedral Shells with Improved Segmentation, filed on February 6, 2002.

Response to Amendment

In response to the examiner's office action dated August 11, 2003, the applicant has amended claims 1, 14, 18, 20, and added claims 15-20.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Monson et al., US Publication number US 2002/0078635 A1.

The applied reference has a common invention with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Monson discloses the claimed invention a dome (100) of generally spherical form comprising, an inner shell (44) and an outer shell (42) each of the shells further

Art Unit: 3635

comprising, a plurality of whole segments (40) having a substantially identical shape (figure 1), a plurality of partial segments (20) each of the partial segments having a shape which is a part of the shape of the whole segments (figure 2C), **substantially identical shape comprising a generally parallelogram shape with adjacent sides of differing lengths (as shown by 104a, 104b and 104c in figure 6)** and a joining means (24, 26) and a spacing means (46) for holding the shells in a spaced -apart relationship (page 2, paragraph [0033]), **characterized in that all of the segments combined compose more than 39% of the area of the shell (figure 6)**; one of the segments of the inner shell (44) is paired in radial alignment with one of the segments of the outer shell (42) and the aligned segments are held together in spaced apart relationship by the spacing means (46); a method for constructing a shell of generally spherical form comprising fashioning a plurality of substantially identical oblong segments of a generally parallelogram shape, the shape **having adjacent sides of differing length** (page 1, paragraph [0011], lines 1-4), joining together the oblong segments along their edges (page 1, paragraph [0011], lines 4-5), **which combination composes at least 40% of the area of the shell (figure 6).**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuczek, US Patent # 6,282,849.

Tuczek discloses the claimed invention a shell of generally spherical form (figure 18) comprising a plurality of segments (57), characterized in that, the segments are substantially identical and each have a generally parallelogram shape (figure 19); **all of the segments combined compose more than 39% of the area of the shell (figure 18)**; the shape of the parallelogram is substantially a spherical quadrilateral comprising a first long side with a first length, a second long side having a second length near to the first length, and disposed in near parallel alignment to the first long side, a first short side having a first short length, and a second short side having a second short length (see attached figure 23), a first, interior angle between the first long side and the first short side, a second interior angle between the first short side and the second long side, a third interior angle between the second long side and the second short side, and a fourth interior angle between the second short side and the first long side (see attached figure 23); the generally parallelogram shape is derived by division of a face of a spherical triacontehedron (column 4, lines 26-27) into uniform rows and columns (figure 18); the segments have an oblong form, **a plurality of polygonal faces and have a substantially uniform width (figure 19).**

Although Tuczek discloses the claimed invention except for the segments with adjacent sides of differing length, it would have been an obvious matter of design choice to make adjacent sides of differing length since the segments are generally of parallelogram shape, and since applicant has not disclosed that these adjacent sides of

Art Unit: 3635

different lengths solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with adjacent sides of equal lengths as within the reference cited. Also such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

Claims 4-13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuczek, in view of Novak, US Patent # 3,691,704.

Tuczek further discloses the claimed invention including the first long side divides the face of the spherical triacontahedron in half (column 11, lines 19-23) and the plurality of segments is sixty per whole sphere (column 10, lines 5-13), the sum of the first short length and the second short length is substantially equal to the second length of the second long side (see attached figure 23), the sum of the first interior angle and the fourth interior angle is substantially 180 degrees (see attached figure 23), the second interior angle is substantially 72 degrees, the third interior angle is substantially 120 degrees; the first interior angle is approximately 114 or 113 or 115 degrees, the fourth interior angle is approximately 66 or 67 or 65 degrees.

Tuczek does not disclose the segments include underlapping portions adjacent to the shape, lines of overlap separating exteriorly exposed surfaces of overlapping segments, a joining means comprising overlapping portions of adjacent segments, generally spherical form is a portion of a sphere and the segments have a substantially uniform crosswise section, a portion of the jointing means is included within the shape

and a plurality of interstitial elements positioned between the segments; each segment occupies substantially $\Pi/15$ steradians of solid angle.

Novak teaches a shell of generally spherical form including segments (12) including underlapping portions (15) adjacent to the shape, lines of overlap (16) separating exteriorly exposed surfaces of overlapping segments, a joining means (column 2, lines 23-24) comprising overlapping portions (15, 16) of adjacent segments, generally spherical form is a portion of a sphere (figure 1) and the segments have a substantially uniform crosswise section, a portion of the jointing means is included within the shape (figures 1 and 4) and a plurality of interstitial elements (15, 16) positioned between the segments. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the segments of Tuczec with the underlapping portions, lines of overlap, joining means included in the shape and interstitial elements as taught by Novak with the segments of Tuczec in order to provide mating nubs which would provide an interfitting and interlocking fit for the segments (column 1, lines 38-43). Although Tuczec discloses the claimed invention except for each segment occupies substantially $\Pi/15$ steradians of solid angle, it would have been an obvious matter of design choice to provide each segment occupies substantially $\Pi/15$ steradians of solid angle since applicant has not disclosed that this amount of steradians solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the segments and angles as disclosed within the reference cited.

Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Monson et al.

Monson discloses the claimed invention as stated above in claims 18 and 20, including the method steps of overlapping portions of the oblong segments (page 1, paragraph [0011], lines 4-8), placing interstitial elements between the oblong segments (page 1, paragraph [0011], line 6), inserting segments including structural support elements (32) and including attachments (48) - (page 1, paragraph [0011], lines 6-8); Monson does not disclose the method step of inserting segments which include transparent parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the step of inserting segments which include transparent parts in order to provide a transparency of the panel to allow for viewers to see outside of the structure (page 3, paragraph [0035]).

Response to Arguments

Applicant's arguments filed 3/11/04 have been fully considered but they are not persuasive.

In response to applicant's argument that Tuczec lacks a shell of generally spherical form comprising segments that are of a generally parallelogram shape, the examiner recognizes the argument however, the limitations "generally spherical" or "generally parallelogram shaped" indicates that the surface need not be strictly spherical or parallelogram shaped in order to fall within the scope of patent, generally is sometimes construed liberally to avoid unduly restricting claims, impression cannot be allowed to negate modified word's meaning: "generally spherical" or "generally

parallelogram shaped" in claim was intended to allow for irregular deviations from a perfectly spherical or paralleled shaped object, therefore the limitations are still considered to be readable on the prior art of reference.

In response to applicant's argument that Novak lacks a generally parallelogram shape segment, the examiner recognizes the argument, however as stated above in regards to the term "generally" does not restrict the claim, and it is shown within figures 2 and 4 specifically, that the segment are of a generally parallelogram shape, and they also have adjacent sides of differing lengths since some sides are curved more than other sides. Also, Novak is used to teach that it is known in the art to provide a shell with underlapping portions, lines of overlap, joining means of segments.

In regards to the applicants argument that Tuzek does not discuss how his system of flat panels and straight edge bars might be adapted to spherical surfaces, the examiner recognizes the argument, however, within the claims, the applicant is referring over and over to a generally spherical dome. Within Tuzek, although the pieces are flat panels with edge bars, it is constructed to be a generally spherical shaped dome structure as shown in figure 18 and 21. Also, it has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense and is therefore not given much patentable weight.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the rejection is found in the knowledge generally available to one of ordinary skill in the art, for example within claim 14 as noted by applicant, it should be brought to the applicants attention that Tuczec discloses the claimed invention within claim 14 without the use of combining the reference Novak. Novak is later used to teach other limitations such as joining means within other claims.

For clarity, the applicant has incorporated all of the newly added limitations from the amendment filed in March of 2003, in bold face typing as well as how the examiner interprets these limitations according to the references cited.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christy M Green whose telephone number is 703-308-9693. The examiner can normally be reached on M-F 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Friedman can be reached on 703-308-0839. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cg

May 11, 2004


Carl D. Friedman
Supervisory Patent Examiner
Group 3600

